Attorney's Docket No. 033679-040

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	
Kenneth G. Noggle	Group Art Unit: 3722
Application No.: 09/782,915	Examiner: Dana Ross
Filed: February 13, 2001	Appeal No.:
For: CUTTING TOOL ADJUSTMENT DEVICE	

BRIEF FOR APPELLANT

Mail Stop APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This appeal is from the decision of the Primary Examiner dated May 6, 2004 (Paper No. 15), finally rejecting claims 1-7, which are reproduced as an Appendix to this brief.

A check covering the ☐ $165.00 (2402) ☒ $330.00 (1402) Government fee and two extra copies of this brief are being filed herewith.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. A copy of this page and the signature page are submitted in triplicate.

I. Real Party in Interest

The real party in interest is the assignee, VALENITE INC., Madison Heights, Michigan.

II. Related Appeals and Interferences

The Appellant's / Appellants' legal representative, or assignee, does not know of any other appeal or interferences which will affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 1-7 stand rejected over the prior art.

Claims 20-32 have been allowed (see page 4, section no. 5 of the final rejection).

IV. Status of Amendments

A Request for Reconsideration filed in response to the Final Rejection was considered by the examiner.

V. Summary of the Invention

The present invention relates to a device for adjusting the position of a cutting insert that is adjustably secured in a pocket disposed in a holder, such as a tool body or a cartridge.

It is conventional to provide an adjusting device wherein the insert is adjusted by a wedge-shaped member which, when actuated by a screw, is caused to slide along a flank of the insert and thereby displace the insert. However, the sliding contact between the wedge and the insert produces an irregular sticking friction which results in an irregular movement of the wedge.

That problem is avoided by another conventional adjusting device in the form of a sleeve or pin having a slotted end which is expandable by a wedging screw, as shown in Fig. 7 (which depicts an adjusting device disclosed in the Basteck patent of record). The sleeve is force fitted into the tool body, and the screw engages an internal thread of the sleeve to draw a tapered head of the screw into the sleeve to deform the upper portion of the sleeve. One drawback of this device is that as the screw is advanced in the sleeve, rotational and linear forces are exerted on the sleeve which can eventually degrade the force fit.

The present invention avoids such a shortcoming by providing an intermediate member (e.g., a sleeve 50) which is actuated by a wedging device (e.g., a conical art of a screw 70) that is attached directly to the holder rather than to the intermediate member. That is, the thread 74 of the wedge is screwed into the tool body as disclosed at page 15, lines 13-15 of the specification.

Thus, with reference to the embodiment of Figs. 1-4A, the invention involves a device for adjusting the position of a cutting insert 14 adjustably secured in a pocket 20 disposed in a holder (or tool body) 12 comprising:

a cavity 44 in said holder, at least a portion of said cavity being contiguous with said pocket;

an intermediate component 50 separate from said holder and disposed within said cavity, said intermediate component comprising an external peripheral surface 58 and at least one expansion mechanism (slots 54), said external peripheral surface engaging the insert at said contiguous portion; and

a wedging device 70 movably attached directly to said holder via thread 74 and engaging the intermediate component such that actuation of the wedging device results in expansion of the intermediate component in a direction substantially parallel to a desired direction of adjustment of the insert (e.g., to the left in Figs. 1 and 2).

VI. The Issues

At issue is whether claims 1-7 are obvious over Basteck U.S. Patent 5,391,023.

VII. Grouping of Claims

Claims 1-5 stand or fall together. Claim 6 is independently patentable.

VIII. Argument

Claim 1 recites a combination of features, including an intermediate member that is separate from the holder and a wedging device which is directly attached to the holder.

For example, the wedging screw 70 Is attached by threads 74 directly to the tool body 12 (see pg. 15, lines 13-15). In contrast, Bastek's wedging screw 37 is connected directly to the pin or sleeve 32 (not to the holder). As pointed out in paragraph no 4 of the present application,

> [t]he stop pin [of Bastek] is force fitted into the tool body and the screw engages an internal thread of the pin to draw the tapered head into the conical internal passage of the stop pin. Because the screw engages the pin, and not the tool body, the pin must be retained in the tool body by a force fit or other means independent of the screw. One drawback of this device is that as the screw is advanced in the pin, rotations and linear forces are exerted on the stop pin which over time can degrade the force fit. (emphasis added)

Claim 1:

That problem is avoided by the direct connection of the wedging device to the holder as recited in claim 1.

It was asserted in the Final Rejection that it would have been obvious to increase the size of the adjustment screw 37 of Bastek '023 so that it becomes threadedly engaged to the holder. Such a change involves much more than a mere

change in size of a component as alleged in the Official action. Besides requiring the machining of a threaded hole in the holder to receive the screw, it also places at risk the accuracy of the insert adjustment.

In that regard, Bastek seeks to obtain a very accurate adjustment of the insert.

> The object of the invention is to provide a machine reamer of the type described that permits sensitive, accurate adjustment of the cutter in the longitudinal direction of the slot. (column 1, lines 28-31)
>
> * * *
>
> Very accurate and sensitive longitudinal adjustment of the cutter 18 is thus possible. (column 3, lines 28-30)

By modifying Bastek's device n the manner proposed in the final rejection, there would result an arrangement wherein the screw 37 is threadedly engaged in both the stop pin 32 and the holder 12. Unless the screw threads in the stop pin 32 and the holder 12 are of precise, identical shape and size, there will be a tendency for the stop pin 32 to be displaced axially while it is being rotated, which would undesirably negate or magnify the intended adjustment of the insert 18. Note that in the device as disclosed by Bastek, rotation of the screw results in axial movement of the screw without any risk of axial movement of the stop pin 32. Therefore, a user knows that rotation of the screw by a given amount of rotary turning will produce a certain bending (flexing) of the head 44 of the pin 32 in the right or left direction which can be correlated to the extent of insert adjustment. Accordingly, the adjustment is predictable.

On the other hand, if the device were modified as proposed in the final rejection, the stop pin would be under the simultaneous influence of two thread connections. If, for example, the pitch or angle of the thread formed in the holder 12 were slightly different from that of the pin 32, rotation of the screw would result in a jamming of the screw or an axial movement of the pin. The disadvantage associated with jamming is evident. The disadvantage associated with axial movement of the pin is that it affects the displacement of the insert. Thus, if the head 44 of the pin 32 were flexed by the screw head simultaneously with an axial movement of the pin 32,

the displacement of the insert could no longer be accurately predicted as a function of the amount of screw rotation.

In an Advisory action mailed August 11, 2003, the following comment was made:

> Though the length of the threaded wedging device of Basteck is not specifically disclosed figure 1 shows an area below the intermediate member where the wedging device 37 can extend. There is nothing limiting the structure of Basteck to allow for the wedging device to be screwed into the intermediate member such that the bottom of the wedging device directly attaches to the holder 12.

However, the issue is not whether it would be physically possible to attached Bastek's wedge directly to the holder, but rather whether there is any motivation to do so. It is hard to imagine why an artisan would go to the trouble of adding a threaded connection in Bastek between the screw and the holder which merely serves to add to the cost and difficulty of manufacture and jeopardizes the accuracy of insert adjustment that is being sought.

Hence, there is not only a lack of motivation for making the proposed modification, there is actually considerable motivation for not making it.

Therefore, it is submitted that claim 1, along with dependent claims 2-7 distinguishes patentably over Basteck.

Claim 6:

Regarding claim 6, that claim recites that an expansion element intersects each of two opposite end faces, i.e., slots 54 intersect the top end face 62 in Fig. 2 and the opposite bottom end face (not depicted). Basteck does not disclose slots formed in the opposite top and bottom end faces of the screw 37, but rather only in the top face. Accordingly, it is submitted that claim 6 distinguishes patentably over Basteck for that reason.

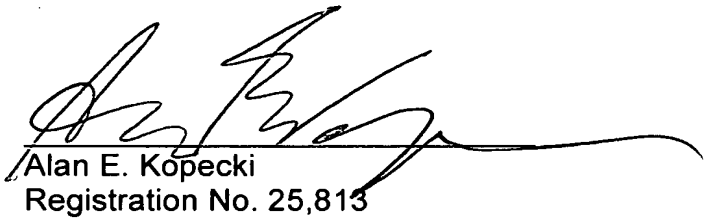
CONCLUSION

In light of the foregoing, it is submitted that the rejection of claims 1-7 should be reversed.

Respectfully submitted,

Burns, Doane, Swecker & Mathis, L.L.P.

Date June 7, 2004

By: 
Alan E. Kopecki
Registration No. 25,813

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620